



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,919	08/02/2006	Friedrich Severin Buchler	25045-16	3609
7590 John B Hardaway III Nexsen Pruet P O Box 10107 Greenville, SC 29603				
EXAMINER				
FREEMAN, JOHN D				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
03/19/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/587,919

Applicant(s)

BUEHLER, FRIEDRICH SEVERIN

Examiner

John Freeman

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27 and 30-58 is/are pending in the application.
- 4a) Of the above claim(s) 47-52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27, 30-46 and 53-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claim 27 recites a lubricant "2,6,10,15,19,23-hexamethyl tetracosane or an isomer of 2,6,10,15,19,23-hexamethyl tetracosane" The specification, however, only provides support for the use of "2,6,10,15,19,23-hexamethyltetracosane" (p14, lines 7-9; p44, line 26). The specification makes no mention of the use of isomers of hexamethyltetracosane.
2. Claims 30-31 and 38 are objected to because of the following informalities:
 - In correcting spelling mistakes previously identified (e.g. poly(oxy~~m~~ethylene), the changes to the claim are not shown. Further, other words are now misspelled, e.g. "polyether siulfone" and "acylnitrile/butadiene/styrene polymer". Also, come commas are missing from the claim.
 - Claim 31 should read "or application to a granulate made from said polyamide" to be grammatically correct.
 - Claim 38 is lacking indefinite articles ("a") for the coatings, e.g. "a colouring substance".Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
4. Claim 54 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.
5. While the specification provides support for lactams, amino acids, dicarboxylic acids, and diamines having skeletons originating from aliphatics, cycloaliphatics, or aromatics, it does not provide

Art Unit: 1794

support for the further use of "copolymerized monomers selected from the group consisting of aliphatic, cycloaliphatics and aromatic" as presently claimed.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 30, 34, 35, 37, 39, 40, 54, and 57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. The claims are generally narrative and indefinite, failing to conform to current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. Substantive errors are pointed out below.

Claim 30

9. Claim 30 recites the limitation "said other plastics". There is insufficient antecedent basis for this limitation in the claim.

Claim 34

10. The claim as written indicates the composite molded article further comprises **all** of the identified layers because the sentence uses "and". For the purposes of examination, the examiner interprets this claim to apply a third layer to the composite article of claim 27.

Claim 35:

11. Claim 35 recites "said composites are coated...and further attached with or without a primer-coat and subsequently cured." As the claim reads now, the *composites* are attached with or without a primer to some unidentified material and then cured. Applicant appears to attempt to say the coatings, hardcoat, or dyeable hardcoat are attached to the composite with or without a primer and then cured. For the purposes of examination, the examiner interprets this claim to apply a coating with or without a primer to the composite molded article of claim 34.

Claim 37

12. Claim 37 recites the composite can be "used for...multi-layer films, and compound containers." It is not clear what compound containers Applicant attempts to claim. Further, it is unclear why Applicant claims "multi-layer films" since claim 27 recites films and composites.

Claim 39

13. Claim 39 recites the composite molded article "comprising transparent plastic containing lubricants joined...to decorative films..." The examiner believes the "transparent plastic containing lubricants" refers to the polyamide molding compound of claim 27. Clarification is requested. For the purposes of examination, the examiner interprets claim 39 to apply a third layer to the composite article of claim 27.

Claim 40

14. The use of nuclei and variations thereof (e.g. mononuclear) within claim 40 render the claim indefinite. It is not clear for example what an aromatic nucleus means.

Claim 54

15. Claim 54 recites "copolymerized monomers selected from the group consisting of aliphatic, cycloaliphatics, and aromatic." As the elements of the Markush group are adjectives, it's not entirely clear what they refer to. Further, it is not clear if Applicant intends for the polyamide to "further" comprise these monomers, or simply further limit the identity of the monomers used in the polyamide. For the purposes of examination, the examiner interprets claim 54 to limit the identity of the dicarboxylic acid and diamine monomers.

Claim 57

Claim 57 recites "grafted sheath/core polymers and impact strength modifiers, thermotropic additives..." It is unclear whether Applicant intends for the impact strength modifier to include both "grafted sheath/core polymers and impact strength modifiers" or whether Applicant intended for the two to be separate options in the Markush group. For the purposes of examination, the examiner interprets them to be separate elements in the Markush group, as originally identified in the specification and original claims.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 27, 30-35, 37-54, and 56-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buhler (US 2003/0235666) in view of Plachetta et al. (US 4,877,823) or Stendel et al. (US 4,631,231) or Epstein (US 4,174,358), and Ingersoll (US 3,649,541) or Kato (US 4,908,726).

18. Regarding claims 27, 30, 37, and 53:

19. Buhler discloses polyamide molding compounds useful for molded articles [0012]. The molded articles can be used as lenses, i.e. they are clear [0013]. The articles can comprise multiple layers of the polyamide [0051-52].

20. The molding materials comprise lubricants such as paraffin oils [0043-44].

21. Buhler is silent with regard to the amount of lubricant used.

22. Lubricants were well-known additives in the art, however, and the claimed range falls within standard ranges. For example, Plachetta et al. discloses thermoplastic polyamide molding materials having lubricants of not more than 2% by weight (col 7 ln 15-20); Stendel et al. disclose a molded article of polyamide having up to 20% by weight of lubricants (col 2 ln 30-42); and Epstein discloses molded articles of polyamide having up to 1.0% by weight of lubricants (col 8 ln 67-68).

23. It has long been an axiom of United States patent law that it is not inventive to discover the optimum or workable ranges of result-effective variables by routine experimentation. *In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003) ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."); *In re Boesch*, 617 F.2d 272, 276 (CCPA 1980) ("[D]iscovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art."); *In re Aller*, 220 F.2d 454, 456 (CCPA 1955) ("[W]here the general conditions of a claim

Art Unit: 1794

are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."). "Only if the 'results of optimizing a variable' are 'unexpectedly good' can a patent be obtained for the claimed critical range." *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997) (quoting *In re Antonie*, 559 F.2d 618, 620 (CCPA 1977)).

24. At the time of the invention, it would have been obvious to one of ordinary skill in the art to add lubricants to the molding compounds as taught by Buhler to improve the processing properties of the compounds, and further it would have been obvious to arrive at the presently claimed loading range through routine optimization.

25. The references are silent with regard to the use of a tetracosane lubricant.

26. 2,6,10,15,19,23-hexamethyl tetracosane (also called squalane) was a well-known lubricant at the time of the invention, however. For example, Ingersoll teaches the use of squalane in a resin (col 10 ln 62-64); and Kato teaches the addition of liquid paraffins and squalane to a composite plastic in amounts from 0.5-2.0% by weight (col 2 ln 35-44).

27. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use squalane and paraffin oils as a lubricant in the composite article given it was a well-known lubricant with understood properties to improve the processing properties of the compounds of Buhler.

28. Regarding claim 31:

29. The lubricants are added to the plastic pellets (granules) of the molding compounds [0043].

30. Regarding claims 32, 40, 41, 43-46, and 54:

31. The polyamide molding compounds comprises dicarboxylic acids and diamines that are the same compounds as disclosed in the present claims 43-46 [0019-0021].

32. Regarding claim 33:

33. The molded article can be made by methods such as injection molding methods [0048].

34. Regarding claim 34:

35. The molded articles may further comprise additional layers [0022, 53, 58], such as polarizing sheets. Other layers can be vapor coated to the article [0022].

36. Regarding claim 35:

Art Unit: 1794

37. The molded articles can be dyeable hard coated with lacquers applied to the article via a solution, and subsequently cured [0056].

38. Regarding claim 38:

39. The dyeable hardcoat is intrinsically a scratch-proof coating.

40. Regarding claims 39 and 56:

41. The molded articles may comprise additional layers [0022, 53, 58], such as polarizing sheets.

42. Regarding claims 42, 57, and 58:

43. The molded article contains impact modifiers, and reinforcing materials [0044]. Impact strength modifiers such as terpolymers of ethylene-glycidyl methacrylate can be used [0044].

44. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Buhler (US 2003/0235666) in view of Plachetta et al. (US 4,877,823) or Stendel et al. (US 4,631,231) or Epstein (US 4,174,358), and Ingersoll (US 3,649,541) or Kato (US 4,908,726) as applied to claims 27, 30-35, 37-54, and 56-58 above, and further in view of Kaganowicz (US 4,328,646) or Reed et al. (US 4,927,704).

45. Buhler in view of Plachetta et al. or Stendel et al. or Epstein teaches a composite material having lubricant therein as discussed previously. Buhler teaches other layers can be vapor coated to the article [0022].

46. The references are silent with regard to a silicon hard coat.

47. Silicon hard coats were well-known in the art for their abrasion resistance properties. For example, Kaganowicz discloses a method of applying inorganic coatings of silicon oxide to plastic substrates via vapor deposition (col 2 ln 30-45), and Reed et al. disclose abrasion-resistant plastic articles vapor coated with silicon materials (claim 1).

48. At the time of the invention, it would have been obvious to one of ordinary skill in the art to apply a vapor-deposited silicon hard coat to the composite material of Buhler to improve the abrasion resistance of the material.

Art Unit: 1794

49. Claims 36 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buhler (US 2003/0235666) in view of Plachetta et al. (US 4,877,823) or Stendel et al. (US 4,631,231) or Epstein (US 4,174,358), and Ingersoll (US 3,649,541) or Kato (US 4,908,726) as applied to claims 27, 30-35, 37-54, and 56-58 /above, and further in view of Hu et al. (US 5,298,587).

50. Buhler in view of Plachetta et al. or Stendel et al. or Epstein teaches a composite material having lubricant therein as discussed previously. Buhler teaches other layers can be vapor coated to the article [0022].

51. The references are silent with regard to a silicon hard coat.

52. Silicon hard coats were well-known in the art for their abrasion resistance properties. For example, Hu et al. disclose a method of forming a protective abrasion resistant coating on a substrate via PECVD (col 1 ln 35-37). Hu also discloses the use of sputtering to prepare the surface (col 6 ln 34-42).

53. At the time of the invention, it would have been obvious to one of ordinary skill in the art to sputter a surface and apply a vapor-deposited silicon hard coat to the composite material of Buhler to improve the abrasion resistance of the material.

Response to Arguments

54. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

55. Applicant refers to paragraph 28 for support for isomers of hexamethyltetracosane. However, paragraph 28 refers to prior art, namely EP 1092747, which apparently discloses said isomers. The specification does not appear to otherwise disclose said isomers.

56. The examiner thanks Applicant for addressing many of the issues raised under 35 USC 112. As noted above, however, further issues remain.

57. Regarding rejections under 35 USC 103, Applicant argues "Ingersoll is related to a magnetic recording disk" and "Kato is specific to a shutter on a disk cartridge" (p25-26). According to Applicant, both references select squalane "with no regard to optical properties" (p26). Applicant is reminded that according to MPEP 2141.01 (a), a reference may be relied on as a basis for rejection of an applicants'

Art Unit: 1794

invention if it is "reasonably pertinent to the particular problem with which the inventor is concerned." A reasonably pertinent reference is further described as one which "even though it maybe in a different field of endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." Ingersoll and Kato are, therefore, reasonably pertinent references, because they teach the use of a lubricant, squalane, in conjunction with polymeric materials, which is a function especially pertinent to the invention at hand.

58. Applicant further asserts "[t]here is no teaching wherein one of skill in the art would be direct to a specific lubricant in a bucket list of lubricants and have any chance of success except by undue experimentation" (26). Applicant submits "[m]any properties contribute to the success of an optical coating" particularly haze (p26). The examiner notes Buhler does not limit the identity of the lubricant., and squalane was a well-known lubricant for use in polymers. Therefore, an artisan of ordinary skill would reasonably expect squalane to provide lubricity to Buhler's polymers. Further, there is no indication from the secondary references that squalane would be unsuitable for optical applications. Finally, Buhler does not limit the haze of the disclosed molded articles. Also, there are uses for optical articles that have varying levels of haze. Acceptable haze values coincide with the intended use of the article.

59. Applicant argues the space of lubricants is so large, one of ordinary skill would not look to "magnetic applications wherein optical clarity is non-existent" (p26), and one "would have no basis for even considering the combination [of a polyamide with squalane] except by a laborious attempt to try all lubricants" (p27). The examiner notes Buhler teaches transparent polyamide articles as presently claimed. Also Buhler does not limit the identity of the lubricant., and squalane was a well-known lubricant for use in polymers. Therefore, an artisan of ordinary skill would reasonably expect squalane to provide lubricity to Buhler's polymers, as long as it would not negatively affect Buhler's invention.

60. Applicant Kaganowicz, Reed, and Hu "provide no guidance on the unique formulation set forth in claim 36 by ultimate dependence on claim 27" (p27-28). However, note that while Kaganowicz, Reed, and Hu do not disclose all the features of the present claimed invention, they are used as teaching reference, and therefore, it is not necessary for these secondary references to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller*

Art Unit: 1794

624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, namely hard coating layers of silicon oxides, and in combination with the primary reference, discloses the presently claimed invention.

Conclusion

61. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wakai ('455) discloses the use of paraffin and squalane as lubricants.

62. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Freeman whose telephone number is (571)270-3469. The examiner can normally be reached on Monday-Friday 7:30-5:00PM EST (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Freeman
Examiner
Art Unit 1794

/John Freeman/
Examiner, Art Unit 1794

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1794